Hip Fractures Among People 65 and Older

Definition: All hospitalizations among people age 65 and older with a principal diagnosis of hip fracture. ICD code: 820.

Summary

In 1994 there were 4,411 hospitalizations in Washington for hip fracture among people 65 and older. The hip fracture hospitalization rate for this age group in 1994 was 714 per 100,000 population. Hip fracture hospitalizations have increased during the past eight years. We are not likely to meet our year 2000 goal without significant improvements in the health and safety of elderly persons.

Time Trends

Data on hip fracture hospitalizations in Washington have been available since 1987. During the eight year period 1987 through 1994, rates for hip fracture among the elderly increased significantly, from 661 to 714 per 100,000.

Year 2000 Goal

Washington's year 2000 goal for hip fractures among people 65 and older is a rate of 630.6 per 100,000 or lower. The data indicate that the problem of hip fracture and other fall-related injuries in the elderly is getting worse, not better. We are not likely to meet our year 2000 goal unless we can improve in the health and safety of elderly persons.

Current US data on hip fracture hospitalization rates for the elderly are not available. The most recent national data (for 1988) suggest that Washington compares favorably to the nation. In 1988 the national hip fracture hospitalization rate for people 65 and older was 714 per 100,000. The Washington rate for that year was 689 per 100,000.

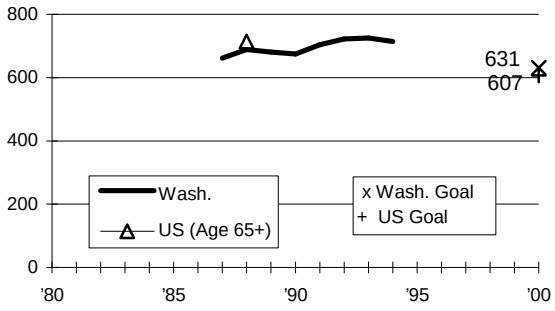
Geographic Variation

In 1994, nearly two-thirds of hip fracture patients 65 and older resided in one of the five following counties: King (1,336 cases), Pierce (525 cases), Spokane (423 cases), Snohomish (362 cases), or Clark (176 cases). The number of hip fractures for Clark County residents may be underreported, since Clark county residents often seek medical treatment at hospitals in Oregon, which are not included in the database used for this analysis.

The map presented below includes 1992-94 average hip fracture hospitalization rates by county for the age 65 and older population. During this period, the counties with the highest hip fracture hospitalization rates were Columbia, Lincoln,

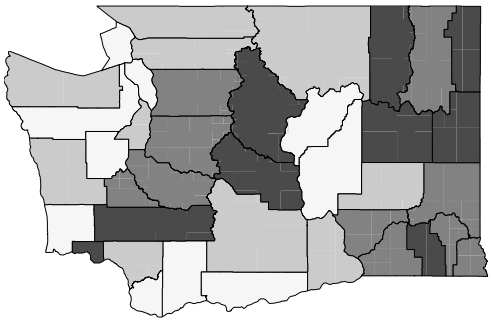
Hip Fractures Among People Age 65+

Hospitalizations Per 100,000 Persons 65 and Older, with Year 2000 Goals



Hip Fracture Hospitalizations, 1992-1994

Average Incidence Rate Per 100,000 People Age 65+



Incidence Rates

- 107 .1 to 619 .9
- 620 .0 to 719 .9
- 720 .0 to 789 .9
- 790 .0 to 1091 .0

State Average: 720.4
National Rate: 714 (1988)

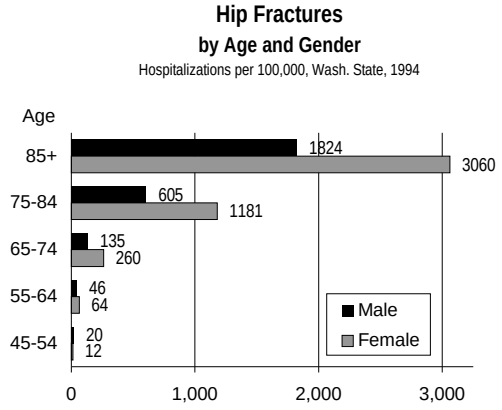
Lewis, Pend Oreille, Spokane, Chelan, Ferry, Kittitas, and Wahkiakum. The counties with the lowest rates were Klickitat, Island, Jefferson, San Juan, Pacific, Mason, Clark, Grant, and Douglas.

Age and Gender

For most injuries, the population at highest risk is young males. Hip fracture is an exception. With hip fracture, the highest risk population is elderly females.

The risk of falls and fall-related injuries increases with age. A doubling of risk for hip fracture occurs at about mid-life (about 45-64 years of age). After age 65, the risk is especially high, with women 85 and older having the highest risk. The hip fracture rate among Washington women 85 and older in 1994 was 3,060 per 100,000.

Females have higher hip fracture rates at all ages. In 1994, the rate of hospitalized hip fracture among females 65 and older was 936 per 100,000: The rate for males in this age group was 409 per 100,000.



Race and Ethnicity

Information about hip fracture hospitalizations comes from the Department of Health's hospital discharge data system (CHARS). Race and ethnicity information is not collected in hospital discharge records. Based on other research findings, it appears that white elderly women are at highest risk for hip fracture compared to women of other race/ethnic groups.[2]

Other Measures of Impact and Burden

Quality of Life. Falls affect more than an individual's physical health; they also affect emotional well-being. Fear of falling can set off a chain of debilitating events: reduced physical activity weakens muscles, and reluctance to engage in social activities increases isolation, leading to loss of confidence in the ability to function independently, and increasing the need for assistance. Between 10% and 25% of people who have fallen admit to avoiding activities such as shopping or housekeeping because of their fears of additional falls or injury.[2] Falls and instability are mentioned as a contributing factor in 40% of nursing home admissions.[4]

Risk and Protective Factors

Osteoporosis. Osteoporosis is a reduction in the amount of bone mass, leading to fractures after minimal trauma. It occurs as a normal process of aging. Hip fractures are considered age-related fractures, usually resulting from the combined effects of osteoporosis and a fall.[4]

Individual health status. The risk of hip fracture is increased by neurological conditions, chronic disease, balance and gait problems, muscular weakness, vision problems, and the use of multiple medications.[1] Weight is a protective factor, with heavier women having a lower risk of hip fracture, partially because of the "padding effect" of higher weight and higher circulating estrogen levels.[2]

Lifestyle behaviors. An inactive life and prolonged immobility or bed rest can increase the risk of fractures. Personal activity habits and institutionalized exercise programs in long term care facilities can reduce the risk of falls and injury resulting from falls. Medication and alcohol interactions can impair balance and increase the risk of falls.[2]

Environmental factors. The risk of fall-related injuries is increased by poor lighting in halls, stairs, and bedrooms; poorly fitting and unsafe footwear; and the presence of obstacles and scatter rugs in the home. Although environmental factors contribute to most falls, the majority of falls (95%) occur during usual daily activities and not during clearly hazardous activities. Long-term care institutions built according to special environmental requirements of the frail elderly, and home hazard assessment and intervention programs can help reduce the incidence of falls.[4]

History of previous falls. Fifty percent of elderly persons who fall do so repeatedly. Frequent falls may be the result of intrinsic factors, such as demographic characteristics, chronic disease, and disability. Infrequent falls may be the result of extrinsic factors, such as environmental hazards.

High Risk Groups

Groups at particularly high risk for hip fracture include:

- Adult white females who are 65 years or older.
- The frail elderly—older adults who are institutionalized are at greater risk because they tend to be more frail than adults living in the community.
- People who are taking multiple medications and taking certain medications that affect balance.
- People who are heavy drinkers.
- Lighter weight women—this risk is partially due to having less "padding" compared to higher weight women, and lower circulating levels of estrogen.[2]
- Individuals with inactive life styles.
- People with a history of previous falls.
- Individuals with certain chronic diseases that affect gait and balance, vision, and muscular strength**.**

Intervention Points, Strategies and Effectiveness

Reducing the incidence of falls and fall-related injuries among senior citizens requires a broad spectrum of interventions involving public health, the medical community, residential programs for the elderly, and senior citizens themselves. Promising strategies include:

Home risk assessment. Home risk assessment can determine environmental hazards. Fall hazards in the home can usually be reduced by improved lighting, handrails, grab bars and non-slip rubber mats and tub decals in bathrooms, and elimination of scatter rugs and other walkway obstacles.

Health care provider assessment. Annual reviews of the health status of elderly patients can identify predisposing disabilities, evaluate patients' medication and alcohol use, perform gait and balance evaluation, review circumstances of previous falls, and make appropriate recommendations for moderate exercise programs. Standards of care for health care providers, clinics, and health care institutions can insure that risk of falling is routinely assessed and addressed Estrogen replacement therapy may be appropriate for post-menopausal women. Hip pads may be beneficial for preventing hip fractures in lighter weight, elderly women.

Public information campaigns. Public information and awareness campaigns for older adults can encourage them to wear appropriate footwear and provide economic incentives for environmental improvements that reduce the risk of serious fall-related injuries.

Exercise programs. Appropriate exercise programs among older adults can increase weight bearing activities, improve gait and balance, and strengthen leg muscles.[3]

Data Sources

State hip fracture hospitalization data: Washington Department of Health, Hospital and Patient Data. Prepared by DOH Injury Prevention Program.

National hip fracture hospitalization data: National Center for Health Statistics

For More Information

Department of Health Injury Prevention Program Telephone: (360) 586-5693.

Technical Notes

Race and ethnicity: See technical appendix

Endnotes:

[1] Alexander, B., Rivara, F., Wolf, M. (1992). The cost and frequency of hospitalization for fall-related injuries on older adults. American Journal of Public Health, 82(7), 1020-1023.

[2] Buchner, D. (1989). Current research in prevention of hip fractures. Washington Public Health, 7(1).

[3] Tinetti, M., Baker, D., McAvay, G., Claus, E., Garrett, P., et al. (1994). A multifactorial intervention to reduce the risk of falling among elderly people living in the community. The New England Journal of Medicine, 331(13), 821-827.

[4] Tinetti, M., & Speechley, M. (1989). Prevention of falls among the elderly. The New England Journal of Medicine, 320, (16). 1055-1059.